

**Implementation of the Leon River Watershed Protection Plan through
Technical and Financial Assistance to Repair or Replace On-Site
Sewage Facilities in Hamilton and Comanche Counties**

Final Report

TSSWCB Project 14-05



Funding provided through a CWA §319(h) Nonpoint Source Grant from the
Texas State Soil and Water Conservation Board and the
U.S. Environmental Protection Agency

Introduction

The Leon River watershed, located in the Brazos River Basin, is bound by Proctor Lake upstream and Belton Lake downstream. The Leon River (Segment 1221) is approximately 190 miles long and the watershed is approximately 1,375 square miles covering portions of Comanche, Erath, Hamilton, and Coryell Counties. A small portion of the watershed lies within Mills County. The Leon River watershed is a predominantly rural, agricultural watershed dominated by rangeland with some cropland. Forests also cover a sizable amount of the watershed.

In 1996 Segment 1221 was placed on the Texas 303(d) *List* of impaired waters for bacteria levels “Not Supporting Contact Recreation Use”. The 2008 §303(d) *List* identified all but two of the segment’s assessment units as impaired or having a concern for near non-attainment resulting from elevated *E. coli* levels. Additionally, five tributaries of the Leon River are impaired for bacteria (1221A – Resley Creek, 1221B – South Leon River, 1221C – Pecan Creek, 1221D – Indian Creek, and 1221F – Walnut Creek).

Placement of the Leon River on the §303(d) List caused the Texas Commission on Environmental Quality (TCEQ) to initiate the development of a total maximum daily load (TMDL). A draft TMDL was published by TCEQ in 2008 that indicated a 21% load reduction in bacteria levels would be needed to restore water quality in the Leon River. Sources of bacterial pollution identified in the Leon River watershed included as wastewater treatment facility discharges, storm water runoff, failing On Site Sewage Facilities (OSSF), wildlife and feral animals, as well as fecal deposition from livestock and pets.

In the midst of the TMDL development process, stakeholders sought to initiate the development of a watershed protection plan (WPP) for the Leon River. Through Texas State Soil and Water Conservation Board (TSSWCB) project 06-12, *Leon River Watershed Protection Plan Project*, a WPP for the Leon River, was anticipated to be completed in Fall 2011. Both the draft TMDL and the draft WPP identify failing OSSFs as a contributor of bacteria to the watershed. The magnitude of pollutant loading from OSSFs at the sub watershed scale was estimated in the draft TMDL report using the 1990 U.S. Census and an assessment of failure rates. The census has an estimated 5,800 OSSFs within the watershed.

In 2010, TSSWCB and the United States Environmental Protection Agency (EPA) entitled “Implementation of the Leon River Watershed Protection Plan through Technical and Financial Assistance to Repair or Replace OSSFs in Hamilton County”. The goal of this project was to inspect and repair or replace failing or faulty OSSFs within the Leon River Watershed in Hamilton County. Over the course of the project, 116 systems were inspected, 69 failing OSSFs were replaced and two were repaired. There were fewer repairs than replacements because the majority of the systems were over 30 years old. The TCEQ requires that any alterations or modifications on existing systems be made in

accordance with current TCEQ rules. The number of systems repaired or replaced well exceeded the original goal of 25 systems.

Hamilton County was awarded another Clean Water Act Section 319(h) grant project from the TSSWCB and the EPA entitled “Implementation of the Leon River Watershed Protection Plan through Technical and Financial Assistance to Repair or Replace Failing On-Site Sewage Facilities in Comanche and Hamilton Counties”.

The continued goal of the project was to identify the number and location of failing OSSFs in each sub watershed as well as technical and financial assistance for homeowners to address and correct this issue.

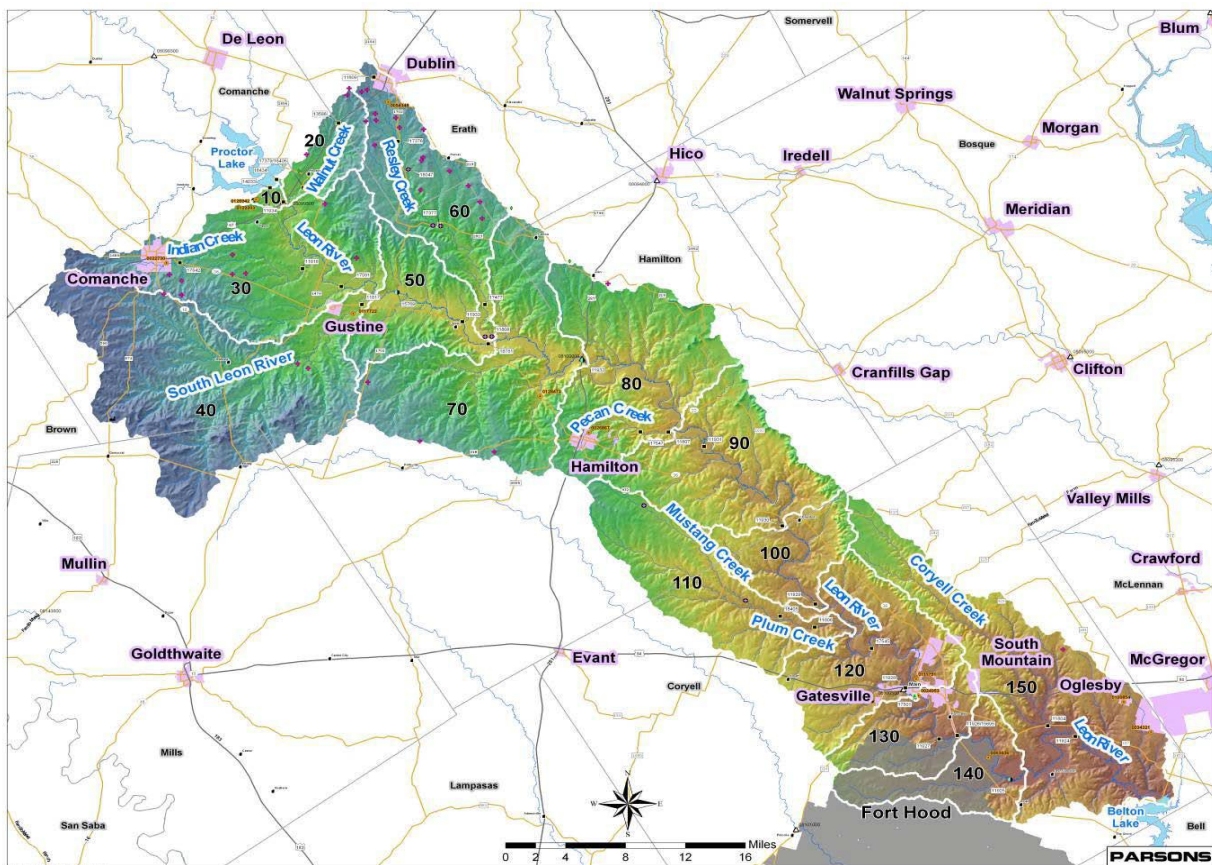


Figure 1. Leon River Watershed

OSSF Program

Hamilton County hired an Environmental Inspector, with a current Designated Representative license, to inspect and provide technical assistance to homeowners in Hamilton and Comanche Counties. The inspector identified homeowners residing in the Leon River Watershed within Hamilton County using tax records received from Hamilton County Appraisal District. Using this information, homeowners were contacted directly or by mail.

All homeowners contacted were given a brochure briefly explaining the program (Appendix A).

The Environmental Inspector attended quarterly meetings with TSSWCB to discuss program progress as well as Commissioner's Court meetings as needed to update Hamilton County officials.

Replacement and Repair

Using data supplied by the Hamilton County Appraisal District, property owners were contacted by mail. A point system was established based on information gathered on the program application as well as an onsite inspection. The inspection process consisted of a site visit and an application which lists, among other things, the gathering of information required assigning a point value. Points were given based on criteria such as proximity to waterways, OSSF location (watershed identification), technology type, functionality, development density, soil type, land surface elevation, system age, depth to groundwater (when possible), distance to water wells and compliance history. Due to the average age of inspected systems being over 30 years old, most systems were not permitted with Hamilton County, so no compliance history was available. In these cases, system history was obtained from the homeowner.

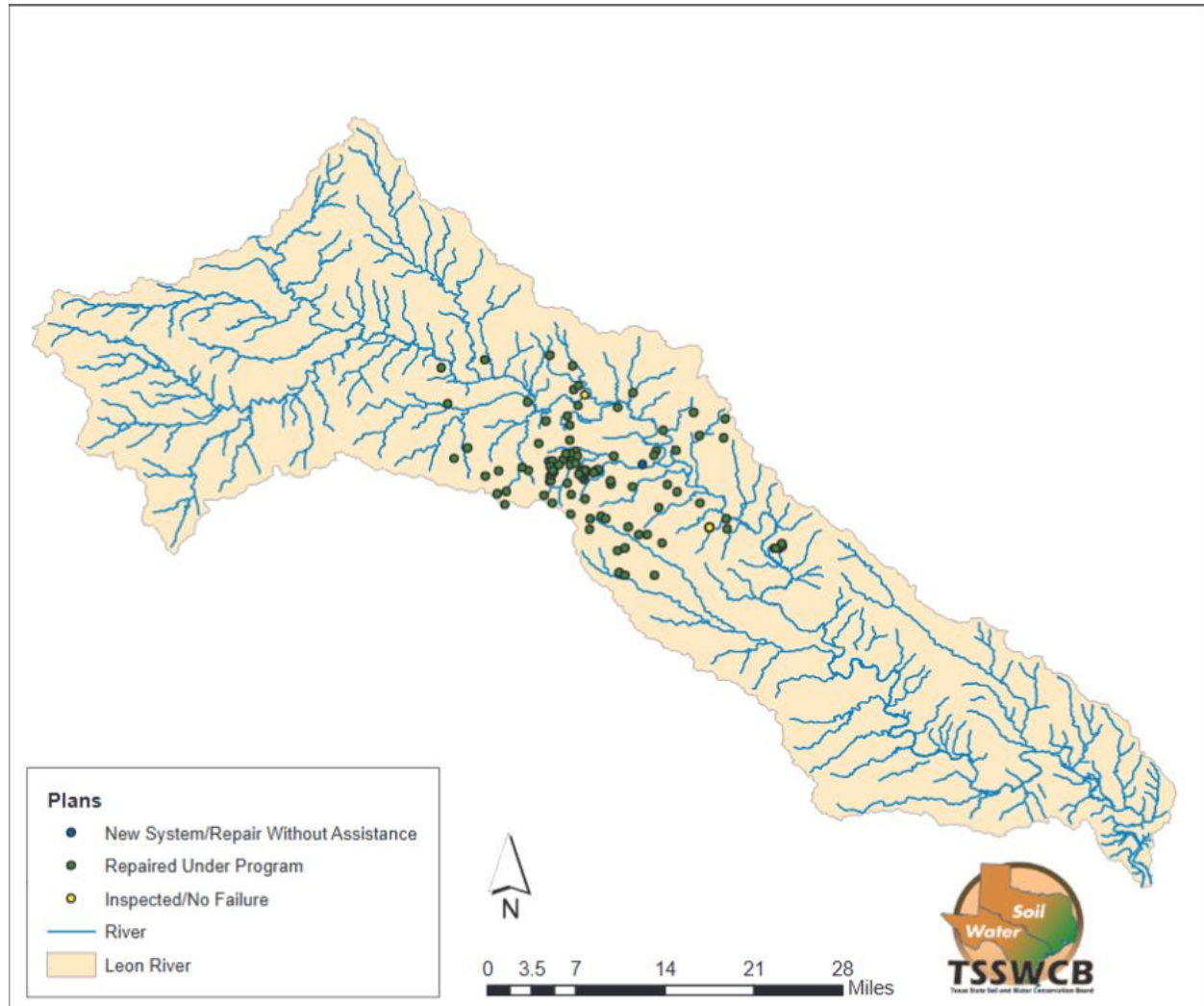
Conclusion

During this project, 3,637 different properties were contacted by mail or in person. This resulted in 59 homeowners applying for the program and requesting an inspection. These efforts resulted in 47 property owners receiving program funds. This number well exceeded the original goal of 21 systems.

The project made financial assistance available to the homeowners by offering 60/40 cost-share split with a maximum of \$4,800 per system. The total construction cost to repair or replace all systems for the project was \$180,481.22. The average construction cost per system was \$3,840.03 when new systems and repairs are combined. At the end of the project all systems were geo-located and displayed on a map (Figure 2).

Using the SELECT model the potential load reduction of fecal coliform from this project is estimated to be 5.6×10^8 mg/L per system per year. For 47 systems, that equates to 2.632×10^{10} mg/L less fecal coliform entering the Leon River per year.

Figure 2: Map of Geo-Located Systems



Appendix A: Program Brochure (tri-fold)

Program Goal



The goal of this technical assistance and financial incentive program is to reduce bacteria levels in our local rivers, streams and tributaries, which can be contaminated by faulty and failing septic systems through soil infiltration/saturation and surface runoff. By evaluating existing septic systems in Hamilton County and providing financial incentives to eligible property owners for the repair of faulty or failing systems, bacteria levels in local surface water bodies should be reduced to acceptable levels over time.



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For more information, please visit our website at www.hamiltoncountytx.org and look for the tab labeled "On-Site Sewage Facility (OSSF) Programs" under "County Offices." This link will provide more details, forms, FAQs and a link to a draft of the Leon River Watershed Protection Plan.

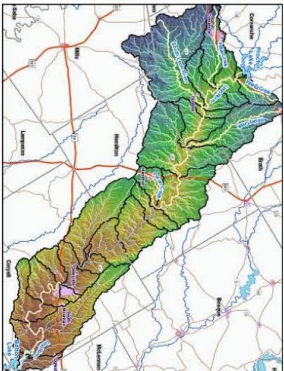
Hamilton County

On-Site Sewage Facility Technical Assistance and Financial Incentive Program

Hamilton County is proud to partner with the Texas State Soil and Water Conservation Board (TSSWCB) and the United States Environmental Protection Agency (EPA) to help reduce bacteria levels within the Leon River watershed by providing technical assistance and financial incentives to qualified property owners for the repair of faulty and failing on-site sewage facilities (OSSFs) located in Hamilton County.



OSSF Program



Background

The Leon River watershed, shown above, was original placed on the Texas 303(d) List, or impaired waters list, in 1996. By 2008, all but two of the segments in the watershed were impaired for elevated bacteria levels. To address the listing, a Total Maximum Daily Load (TMDL) was developed which indicated that a 21% reduction in bacteria levels would be needed to restore water quality in the Leon River. As a result of the TMDL, a stakeholder-driven Watershed Protection Plan (WPP) was developed. The draft TMDL and WPP identify failing OSSFs, also known as septic systems, as a contributor of bacteria to the watershed. Stakeholders agreed that additional data was needed to identify the number and location of failing OSSFs in the Leon River watershed, as well as provide technical

assistance and financial incentives for property owners to address and correct the issue.

Program Overview

Hamilton County has received a Clean Water Act §319(h) Nonpoint Source grant from the TSSWCB and EPA for implementation of a bacteria reduction program to provide technical assistance and financial incentives for eligible property owners to repair or replace existing septic systems which are not functioning properly. An improperly functioning septic system may release bacteria and other pollutants into the ground and surface water causing contamination and possible illnesses to both humans and animals.

Applying For Assistance

Financial incentives are available to qualified property owners not on central sewer collection, who have a faulty or failing septic system or no system at all. Applications can be downloaded from the Hamilton County website or may be picked up at the Hamilton County Clerk, Extension, or Soil and Water Conservation District offices.

Selection Process

Completed applications will be ranked and approved based on a prioritized point system which considers factors such as level of system failure, proximity to a river or other water source, and other factors determined during an on-site evaluation by the Hamilton County Environmental Inspector.

Funding Limitations

This OSSF Program will fund up to 60% of total allowable construction costs, not to exceed a maximum of \$4,000 per sewage generating structure. Actual percentages may vary based on a ranking system. By accepting program funds, the property owner agrees to follow all program terms and conditions, including the attendance of a workshop concerning the proper maintenance and care of a septic system and allow annual follow-up inspections by the County. Approved workshops will be offered through Texas Agrilife Extension Service and the Hamilton County OSSF Program. Qualifying VHS tapes and DVDs are also available.

